

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF NEW YORK**

IN RE CAUSTIC SODA ANTITRUST LITIGATION	Lead Case No.: 1:19-cv-00385-EAW-MJR
THIS DOCUMENT RELATES TO: ALL ACTIONS	<u>CLASS ACTION</u> CONSOLIDATED CLASS ACTION COMPLAINT FOR VIOLATION OF THE FEDERAL ANTITRUST LAWS JURY TRIAL DEMANDED

TABLE OF CONTENTS

	<u>Page(s)</u>
NATURE OF THE ACTION	1
JURISDICTION AND VENUE	3
CLASS ACTION ALLEGATIONS	4
PARTIES	6
Plaintiffs	6
Defendants	8
A. Olin Defendants	8
B. OxyChem Defendants	9
C. Westlake	9
D. Shintech Defendants	10
E. Formosa Plastics Defendants	11
AGENTS AND CO-CONSPIRATORS	12
TRADE AND COMMERCE	13
FACTUAL ALLEGATIONS	13
I. THE CAUSTIC SODA MARKET	13
II. HISTORY OF PRICE INCREASES	19
F. 2015 Pricing	19
G. 2016 Pricing	21
H. 2017 Pricing	23
I. 2018 Pricing	25
J. 2019 Pricing	27
1. Pricing and Margin Summary	28
2. Defendants' Anticompetitive Activities and Agreement	35
3. Industry Characteristics Indicating and Facilitating Defendants' Conspiracy to Restrain Trade	43
a) Market Concentration	44
b) High Barriers to Entry	44
c) Interchangeability of Defendants' Caustic Soda Grades	46

TABLE OF CONTENTS

	<u>Page(s)</u>
d) Inelastic Demand	46
e) Flat or Weak Demand	47
f) Large Number of Purchasers With Limited Purchasing Power	48
g) Ease of Information Sharing Among Defendants	49
4. Effects of Defendants' Conspiracy On the U.S. Market for Caustic Soda and Injury to Plaintiffs and the Class	51
CLAIM FOR RELIEF	52
RESTRAINT OF TRADE IN VIOLATION OF THE SHERMAN ACT § 1 15 U.S.C. § 1 (Alleged Against All Defendants)	52
DEMAND FOR JUDGMENT	54
JURY TRIAL DEMANDED	56

Plaintiffs Amrex Chemical Co., Inc., Finch Paper, LLC, Main Pool & Chemical Company, Inc., Miami Products & Chemical Company, Midwest Renewable Energy LLC, Perry's Ice Cream Company, Inc., and VanDeMark Chemical, Inc. ("Plaintiffs") bring this action individually, and on behalf of a class of all persons and entities similarly situated (the "Class"), for damages and injunctive relief under the antitrust laws of the United States against defendants Olin Corporation, K.A. Steel Chemicals, Inc., Occidental Petroleum Corporation, Occidental Chemical Corporation (d/b/a OxyChem), Westlake Chemical Corporation, Shin-Etsu Chemical Co., Ltd., Shintech Incorporated, Formosa Plastics Corporation, and Formosa Plastics Corporation, U.S.A. (together, the "Defendants"). Plaintiffs allege facts regarding themselves based on personal knowledge, and all other facts below on information and belief after an investigation by counsel. Plaintiffs believe that discovery of the Defendants, and third parties, will uncover evidence supporting the allegations made on information and belief.

NATURE OF THE ACTION

1. This civil antitrust action seeks damages and injunctive relief arising out of the collusive and concerted restraint of trade in sodium hydroxide, commonly known as Caustic Soda, by the Defendants—all of whom are direct competitors and leading manufacturers of Caustic Soda in the United States—during a period spanning from at least October 1, 2015, to the present (the "Class Period"). But for Defendants' and their co-conspirators' collusive conduct as alleged herein, Plaintiffs and members of the class Plaintiffs seek to represent would not have paid—and would not continue to pay—artificially inflated prices for Caustic Soda.

2. Caustic Soda is a commodity chemical sold in solid and liquid forms that is produced as a co-product of chlorine production from the electrolysis of brine or salt water. Caustic Soda is consumed by customers in a variety of industries, including paper, pulp and

cellulose; chemical production; soaps and detergents; aluminum; food processing; water treatment; textiles; mineral oils; recycling; and pharmaceuticals. Defendants are estimated to control at least 90% of the domestic supply of Caustic Soda.

3. From approximately 2012 until the fourth quarter of 2015, Caustic Soda prices were either declining or flat, and industry margins were poor, given industry overcapacity and flat demand. These conditions motivated the Defendants to conspire and combine to restrict domestic supply; to fix, raise, maintain, and stabilize the price at which Caustic Soda was and continues to be sold; and to allocate customers in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1. Beginning in the fourth quarter of 2015, the Defendants announced Caustic Soda price increases in a coordinated fashion and began increasing Caustic Soda prices despite sluggish demand, stable or declining costs, and excess capacity. They also at times refused to supply customers, put them on allocation, or refused to bid on contracts while falsely claiming supply was tight or scarce. Defendants' market shares have been relatively stable since 2015, with customer turnover lower in the years since the fourth quarter of 2015 than before that quarter. In sum, Defendants entered into an agreement or understanding to increase prices of Caustic Soda and not to compete on price for the business of each other's customers.

4. The alleged conspiracy was facilitated by secret co-producer supply agreements; by exchanges of nonpublic, commercially sensitive information (including future strategy, supply, capacity, and price information) between and among Defendants and their agents, both directly with each other, and indirectly through third parties; by manipulation of a price index; and by the characteristics of the industry: high market concentration, high barriers to entry, interchangeability of Defendants' products, inelastic demand, weak demand, a larger number of purchasers with limited buying power, and relatively easy information exchanges among the Defendants.

Defendants, as alleged, have formed a cartel and are cooperating as an industry, having reached an agreement or understanding to limit and manage production and supply, maintain and increase already artificially inflated prices, and maximize revenues to improve industry profits, which have soared since the beginning of the Class Period.

5. Average quarterly North American undiscounted Caustic Soda prices declined approximately 6% between the fourth quarter of 2012 through the third quarter of 2015. Since the fourth quarter of 2015 (the beginning of the Class Period), however, numerous across-the-board price increases were implemented by the Defendants that impacted all purchasers of Caustic Soda, and prices have increased more than 50%. As a result of Defendants' unlawful conduct, and their transition from passive members of an oligopoly to active coordinators of supply and pricing, Caustic Soda prices in the United States paid by Plaintiffs and other members of the Class have been artificially increased by a substantial amount, and maintained during the Class Period above levels that would be expected due to supply and demand conditions. Therefore, Plaintiffs and the other members of the Class have been injured and have suffered damages, and they continue to suffer such injuries as a direct and proximate result of Defendants' actions.

JURISDICTION AND VENUE

6. Plaintiffs bring this action on their own behalf as well as that of the Class to recover damages, including treble damages, costs of suit, and reasonable attorney's fees arising from Defendants' violations of Section 1 of the Sherman Act (15 U.S.C. § 1).

7. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1337(a), and Sections 4 and 16 of the Clayton Act (15 U.S.C. §§ 15(a) and 26).

8. Jurisdiction and venue are proper in this judicial district pursuant to Section 12 of the Clayton Act (15 U.S.C. § 22), and 28 U.S.C. § 1391(b), (c) and (d), because a substantial part

of the events giving rise to Plaintiffs' claims occurred in this District, a substantial portion of the affected interstate trade and commerce was carried out in this District, and one or more of the Defendants resides in this District, is licensed to do business in this District, or transacts business in this District.

CLASS ACTION ALLEGATIONS

9. Plaintiffs bring this action on behalf of themselves and as a class action pursuant to Federal Rules of Civil Procedure, Rule 23(a) and (b)(3), on behalf of a Class, defined as follows:

All persons and entities who purchased Caustic Soda in the United States directly from one or more of the Defendants or their co-conspirators (or from any of Defendants' or their co-conspirators' parents, predecessors, subsidiaries or affiliates) at any time between October 1, 2015, and the present. Excluded from the Class are Defendants, their co-conspirators, parents, predecessors, subsidiaries, and affiliates, and all federal government entities and instrumentalities of the federal government.

10. Plaintiffs do not know the exact number of Class members, because such information is in the exclusive control of the Defendants. Plaintiffs are informed and believe that, due to the nature of the trade and commerce involved, there are at least hundreds of Class members geographically dispersed throughout the United States and elsewhere, such that joinder of all Class members in the prosecution of this action is impracticable.

11. Plaintiffs will fairly and adequately represent the interests of the Class because either they or their assignor directly purchased Caustic Soda from one or more Defendants, and they have no conflicts with any other members of the Class. Furthermore, Plaintiffs have retained sophisticated and competent counsel experienced in prosecuting antitrust class actions, as well as other complex litigation.

12. Plaintiffs' claims are typical of the claims of their fellow Class members because either Plaintiffs or their assignor directly purchased Caustic Soda from one or more of the

Defendants named herein, and Plaintiffs and all Class members were damaged by the same wrongful conduct of Defendants as alleged herein, and the relief sought herein is common to all members of the Class.

13. Numerous questions of law or fact common to the Class—including, but not limited to, those identified below—arise from Defendants’ anticompetitive and unlawful conduct:

- a. Whether Defendants combined or conspired to fix, raise, maintain, or stabilize prices of Caustic Soda sold at any time during the Class Period to purchasers in the United States;
- b. Whether Defendants (1) shared among themselves nonpublic and competitively sensitive information pertaining to the production, sale, pricing, or distribution of Caustic Soda, (2) concertedly fixed, raised, maintained or stabilized the price of Caustic Soda sold at any time during the Class Period, (3) concertedly restricted the amount of Caustic Soda they made available for sale and ultimately sold in the United States, (4) concertedly allocated customers and maintained market shares, and (5) committed other conduct in furtherance of the conspiracy alleged herein;
- c. Whether Defendants’ conduct caused the prices of Caustic Soda sold at any time during the Class Period to be artificially fixed, raised, maintained, or stabilized at noncompetitive prices;
- d. Whether Plaintiffs and the other members of the Class were injured by Defendants’ conduct and, if so, the appropriate Class-wide measure of damages; and
- e. Whether Plaintiffs and other members of the Class are entitled to, among other things, injunctive relief, and, if so, the nature and extent of such relief.

14. These and other questions of law and fact are common to the Class and predominate over any questions affecting the Class members individually.

15. Defendants have acted on grounds generally applicable to the Class, thereby making final injunctive relief appropriate with respect to the Class as a whole.

16. This class action is superior to alternatives, if any, for the fair and efficient adjudication of this controversy. Prosecution of the claims pleaded herein as a class action will eliminate the possibility of repetitive litigation. There will be no material difficulty in the management of this action as a class action.

17. The prosecution of separate actions by individual Class members would create the risk of inconsistent or varying adjudications, establishing incompatible standards of conduct for Defendants.

PARTIES

Plaintiffs

18. Plaintiff Amrex Chemical Co., Inc. is a New York corporation with its principal place of business in Binghamton, New York. Plaintiff Amrex Chemical Co., Inc., purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

19. Plaintiff Finch Paper, LLC is a New York corporation with its principal place of business in Glens Falls, New York. Plaintiff purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

20. Plaintiff Main Pool & Chemical Company, Inc. is a Pennsylvania corporation with its principal place of business in DuPont, Pennsylvania. Plaintiff Main Pool & Chemical Company,

Inc., purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

21. Plaintiff Miami Products & Chemical Company is an Ohio corporation with its principal place of business in Dayton, Ohio. Plaintiff Miami Products & Chemical Company purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

22. Plaintiff Midwest Renewable Energy, LLC is a Nebraska corporation with its principal place of business in Sutherland, Nebraska. Plaintiff Midwest Renewable Energy, LLC purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

23. Plaintiff Perry's Ice Cream Company, Inc. is a Delaware corporation with its principal place of business in Akron, New York. Perry's Ice Cream Company, Inc. is the assignee of antitrust claims arising from Perry's purchase of Caustic Soda through plaintiff Amrex Chemical Co., Inc., which purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

24. Plaintiff VanDeMark Chemical, Inc. is a New York corporation with its principal place of business in Lockport, New York. VanDeMark Chemical, Inc. purchased Caustic Soda directly from one or more Defendants during the Class Period, and has suffered injury as a result of Defendants' anticompetitive and unlawful conduct.

Defendants

A. Olin Defendants

25. Defendant Olin Corporation (NYSE:OLIN) (“Olin”) is a Virginia corporation with its principal place of business at 190 Carondelet Plaza, Suite 1530, Clayton, Missouri, 63105-3443. Olin manufactures, sells, and distributes Caustic Soda either directly or through its subsidiaries, agents, or affiliates, including defendant K.A. Steel Chemicals, Inc., to customers throughout the United States. Olin manufactures and sells Caustic Soda nationwide, including in the Western District of New York (Niagara Falls, NY) and at locations in Alabama, Louisiana, Nevada, Tennessee, and Texas. Effective October 5, 2015, Olin acquired the Caustic Soda business and other businesses of Dow Chemical Corporation, a former competitor in the Caustic Soda market, in a deal valued at approximately \$5.5 billion. The acquisition more than doubled Olin’s size in the chloralkali industry. Today, Olin is the number one global producer of membrane-grade Caustic Soda (among other products) and is estimated to have a share of over 35% of U.S. Caustic Soda production. Since the fourth quarter of 2015, Olin’s income before taxes from its sales of billions of dollars of Caustic Soda has soared. The income of Olin’s Chlor Alkali Products and Vinyls segment, which includes its Caustic Soda business, had declined year over year from 2012-2015. However, Olin’s income from this segment increased from \$115.5 million in 2015 to \$224.9 million in 2016 to \$405.8 million in 2017, an increase of over 250%.

26. Defendant K.A. Steel Chemicals, Inc., a wholly owned subsidiary of Olin Corporation, is a Delaware corporation with its principal place of business in Lemont, Illinois. K.A. Steel had been privately owned until August 2012, when its acquisition by Olin Corporation was completed.

27. Defendants Olin Corporation and K.A. Steel Chemicals, Inc., are referred to collectively herein as “Olin,” unless otherwise stated.

B. OxyChem Defendants

28. Defendant Occidental Petroleum Corporation (NYSE:OXY) (“Oxy”) is a Delaware corporation with its principal place of business at 5 Greenway Plaza, Suite 110, Houston, Texas, 77046-0521. Oxy manufactures, sells, and distributes Caustic Soda through its wholly-owned and controlled subsidiary and chemicals business, defendant Occidental Chemical Corporation.

29. Defendant Occidental Chemical Corporation, also known as OxyChem, is a New York corporation with its principal place of business at Occidental Tower, 5005 LBJ Freeway, Dallas, Texas 75380-9050. OxyChem is a wholly-owned subsidiary of defendant Oxy. OxyChem manufactures, sells, and distributes Caustic Soda to customers throughout the United States. It manufactures and distributes Caustic Soda nationwide, including in the Western District of New York (Niagara Falls, NY), and at locations in Kansas, Louisiana, Tennessee, and Texas.

C. Westlake

30. Defendant Westlake Chemical Corporation (NYSE:WLK) (“Westlake”) is a Delaware corporation with its principal place of business located at 2801 Post Oak Blvd., Houston, Texas 77056. Westlake manufactures, sells, and distributes Caustic Soda either directly or through its subsidiaries, agents, or affiliates throughout the United States. It manufactures Caustic Soda at plants located in Calvert City, Kentucky, and Geismar, Louisiana. In the third quarter of 2016, Westlake completed an all-cash acquisition of Axiall Corporation of Atlanta, Georgia, another large producer of Caustic Soda, which previously had been a competitor of the Defendants in the market for Caustic Soda in the United States. Upon acquiring Axiall, Westlake became the third largest domestic producer of Caustic Soda.

D. Shintech Defendants

31. Defendant Shin-Etsu Chemical Co. Ltd. (“Shin-Etsu”), is a Japanese corporation headquartered at Asahi Seimei Otemachi Bldg., 6-1, Ohtemachi 2-chome, Chiyoda-ku, Tokyo 100-0004, Japan. Shin-Etsu manufactures, sells, and distributes Caustic Soda to customers throughout the United States through its wholly-owned subsidiary, defendant Shintech Incorporated. Shin-Etsu’s PVC/Chlor-Alkali business, of which its Caustic Soda business is a part, is responsible for more sales and net income annually than any of Shin-Etsu’s other businesses.

32. Defendant Shintech Incorporated, headquartered at #3 Greenway Plaza, Suite 1150, Houston, Texas 77046, is a Delaware corporation and is wholly-owned by defendant Shin-Etsu. Shintech manufactures, sells, and distributes Caustic Soda to customers throughout the United States. It manufactures membrane-grade Caustic Soda at its plant in Iberville Parish, south of Plaquemine, Louisiana.

33. At all relevant times, Shintech has acted as the U.S. agent and alter ego for Shin-Etsu. Shin-Etsu has exerted considerable control over the activities and operations of Shintech (which comprises a significant amount of Shin-Etsu’s annual sales revenues and net income), such that the two entities are essentially one. Shin-Etsu’s Board Chairman is also the CEO and President of Shintech. Shin-Etsu also continues to market itself, for example, as “the world’s largest PVC producer” with capacity in the “three main markets” of Japan, the United States, and Europe. Facts demonstrating the substantial control Shin-Etsu has exercised over Shintech include, but are not limited to: (1) Shin-Etsu's direct and controlling ownership interest in Shintech; (2) Shintech's role as the primary U.S. importer and distributor of Shin-Etsu's products; (3) Shin-Etsu's exercise of control over Shintech's marketing, purchasing, pricing, management, and operating policies; (4) Shin-Etsu's role in approving Shintech's significant business decisions; and (5) the overlapping

functions and operations of Shin-Etsu and Shintech. Shin-Etsu knew, or should have known, that its conduct through Shintech would have an impact in the United States and in this judicial district. Shin-Etsu also wholly owns other businesses throughout the United States, including in California, Arizona, and Ohio. According to Shin-Etsu's website, Shin-Etsu and Shintech both share the same North American operational headquarters. Shin-Etsu thus conducts its business in the United States and markets and sells products to U.S. customers through its wholly-owned subsidiary Shintech.

E. Formosa Plastics Defendants

34. Defendant Formosa Plastics Corporation (“FPC”) is a publicly traded Taiwanese company headquartered at 100, Shuiguan Road, Kaohsiung City, Taiwan. FPC manufactures, sells, and distributes Caustic Soda to customers worldwide, including throughout the United States through its subsidiary, defendant Formosa Plastics Corporation, U.S.A. (“FPC USA” or “Formosa”). Defendant FPC is a part of Formosa Plastics Group (Taiwan) (“FPG Taiwan”), a Taiwanese conglomerate that was founded in 1958 by two brothers, Wang Yung-ching and Wang Yung-tsai. Although defendant FPC USA is privately held, FPC USA was wholly owned by defendant FPC when it was founded in 1978, and today, defendant FPC USA is owned wholly by FPC—which owns 22.61% of FPC USA’s stock—and members of the Wang family, who are also shareholders of FPC and other companies within FPG (Taiwan). FPC USA’s website refers to FPG (Taiwan) as a “worldwide organization” with “annual revenues of more than \$70 billion and over 113,000 employees” (a figure that includes both FPC and FPC USA employees), and “a global leader in petrochemicals, plastics and many other industries.” FPC’s 2018 shareholders’ meeting handbook notes that its Caustic Soda sales volume improved 9% from 2016 to 2017, and also that “the Company’s consolidated operating profit of TWD21.93bn in 2017 significantly increased 68.5% from 2016, which is a record high level for the Company in the past 6 years[,

and] [m]oreover, equity investment income from Formosa Petrochemical and FPC USA were TWD29.90bn in 2017, which supported the Company's consolidated pretax profit to break the record high level of TWD51.6bn in 2010 and achieve the highest level in the past 63 years since the Company [was] established."

35. Defendant Formosa Plastics Corporation, U.S.A. ("FPC USA" or "Formosa"), a subsidiary of defendant FPC, is a privately held Delaware corporation headquartered at 9 Peach Tree Hill Road, Livingston, New Jersey 07039-5702. FPC USA is owned and controlled by defendant FPC and persons or companies affiliated with FPC or FPG (Taiwan). Typically, FPC's Chairman and President serves as the President of FPC USA. FPC USA had over \$4 billion in annual revenues in 2016 and 2017, and its sales, revenues, and profits contribute substantially to defendant FPC's. FPC USA, at the direction and under the control of FPC, manufactures, sells, and distributes Caustic Soda either directly or through its subsidiaries, agents, or affiliates throughout the United States. It manufactures membrane-grade Caustic Soda at its plant in Point Comfort, Texas.

AGENTS AND CO-CONSPIRATORS

36. The anticompetitive and unlawful acts alleged against the Defendants in this class action complaint were authorized, ordered, or performed by Defendants' respective officers, agents, employees, or representatives, while actively engaged in the management, direction, or control of Defendants' businesses or affairs.

37. Various persons or firms not named as defendants herein may have participated as co-conspirators in the violations alleged herein, or helped to facilitate them, and may have performed acts and made statements in furtherance thereof.

38. Each Defendant acted as the principal, agent, or joint venturer of, or for, other Defendants with respect to the acts, violations, and common course of conduct alleged herein. Defendants Shin-Etsu and FPC, headquartered outside the United States, relied on their agents in the United States to implement, enforce, and conceal the anti-competitive agreements and understandings through their domestic and global sales, marketing, and production operations.

TRADE AND COMMERCE

39. During the Class Period, each Defendant, directly or through one or more of their respective parents, subsidiaries, agents or affiliates, sold Caustic Soda in the United States in a continuous and uninterrupted flow of interstate commerce and foreign commerce, including through and into this judicial district.

40. During the Class Period, Defendants collectively controlled the market for Caustic Soda in the United States.

41. Defendants' business activities were in the flow of and substantially affected interstate trade and commerce in the United States and caused antitrust injury in the United States to Plaintiffs and members of the Class.

FACTUAL ALLEGATIONS

I. THE CAUSTIC SODA MARKET

42. Caustic Soda, also known as sodium hydroxide or lye, is a commodity chemical sold by Defendants in concentrated liquid or powdered form, and in grades, to customers in a variety of industries, including chemical; paper, pulp, and cellulose; soaps and detergents; aluminum; food processing; water treatment; textiles; recycling; and pharmaceuticals. A by-product of the production of chlorine, Caustic Soda and chlorine are typically produced by Defendants in plants located throughout the United States and the world by means of the

chloralkali process, *i.e.*, the electrolysis of brine or salt water, in which sodium chloride is separated into chlorine and sodium hydroxide. Caustic Soda and chlorine are manufactured primarily through either the membrane or diaphragm process, with “membrane-grade” Caustic Soda often sold at a higher price than “diaphragm-grade” Caustic Soda because it is purer, with lower levels of salt and iron. Most Caustic Soda in the United States is produced via the membrane process, which is considered environmentally safer than the diaphragm process. Membrane and diaphragm grades are functionally interchangeable, even though diaphragm grades are also known as “standard” grades because they are suitable for use in the vast majority of applications. In the United States, Defendants Olin, OxyChem, Westlake, Formosa, and Shintech manufacture and sell membrane-grade Caustic Soda, and Olin, OxyChem, and Westlake also manufacture and sell diaphragm-grade Caustic Soda.

43. Electricity and salt are the key raw materials used to manufacture Caustic Soda, and energy costs are estimated to comprise anywhere from 50-75% of total production costs. Although Defendants’ actual cost data is proprietary and uncertain, it is believed that their costs have been relatively stable since 2015. For example, average wholesale power prices in the United States in the first quarter of 2016 were lower than during the same period in 2015, and power costs generally have been flat and have varied little from 2015 to 2017 as compared with 2013-2015. Similarly, industrial production, a proxy for demand, was lower at the end of 2017 than at the beginning of 2015, yet Defendants increased Caustic Soda prices repeatedly and substantially in 2016-2017 (as well as recently). This was a stark change from the 2013-2015 period, when Caustic Soda prices, like natural gas prices, tended to be stable or declining on average, while industrial production was flat.

44. The Caustic Soda industry also has become significantly more concentrated in the last few years. Dow's gulf coast chloralkali business was acquired by defendant Olin in 2015, making Olin the largest domestic producer of Caustic Soda, and Axiall's Caustic Soda business was acquired in 2016 by defendant Westlake. A chemical industry news article published on December 28, 2016, noted that the change in the U.S. industry from seven producers to five "greatly increased the pricing power of the remaining players[.]" namely, the Defendants.

45. Defendants sell billions of dollars of Caustic Soda to customers in the United States every year, and are estimated to produce at least 90% of the domestic supply of Caustic Soda.

46. Demand for Caustic Soda tends to track the demand for industrial production. The U.S. industrial production index saw slow growth from mid-2009 until a peak in November 2014. It then declined through March 2016, and was flat through November 2016. The index gradually increased after November 2016, although it did not again reach its November 2014 level until April 2018.

47. In 2014 and early 2015, before defendant Olin announced that it intended to acquire Dow's chloralkali assets, defendants Westlake and OxyChem added new chloralkali production capacity, adding to the Caustic Soda industry's overcapacity. Defendants had been struggling to increase prices, and the capacity additions complicated their efforts. Less than six weeks before the start of the Class Period, defendant Olin was encouraged by Axiall to restrain supply upon completion of Olin's acquisition of Dow's chloralkali business. Bemoaning Axiall's poor financial results, Axiall's CEO told analysts in August 2015 that Caustic Soda markets were "oversupplied" and (according to an article) "openly hoped that Olin would cut production once the proposed acquisition [of Dow's chloralkali business] was completed."

48. After capacity additions had created significant excess capacity and pressure on prices, Defendants in a coordinated fashion beginning in late 2015 began to idle or shut down (or “rationalize”) hundreds of thousands of tons of capacity. On November 2, 2015, less than one month after it completed its acquisition of Dow’s chloralkali business and a few months after Axiall’s CEO had publicly called on Olin to cut production, Olin announced that it would idle or shutdown between 250,000 and 450,000 tons of Caustic Soda production capacity in 2016. It then proceeded to idle or shut down at least 433,000 tons of annual capacity beginning in the first quarter of 2016. At around that same time, Axiall (which had started acquisition discussions with defendant Westlake) cut production by 78,000 dry standard tons (“dst”) per year and, later in 2016, defendant OxyChem reduced its Caustic Soda output by 150,000 dst/year. There were also temporary shutdowns for plant maintenance and outages throughout 2016, including by defendants Olin, OxyChem, Formosa, and Westlake, and maintenance issues may even have reduced capacity by as much as 10% in the fourth quarter of 2016 alone. In fact, when the market was informed via an industry news article that the alumina refinery of a large Caustic Soda purchaser would close due to bankruptcy in 2016, the market was also informed that the 150,000 dst/year that had been supplied to it was destined for the export market (*i.e.*, a representation that it would not be used to compete for domestic business).

49. At times during the last three years, Defendants claimed that there were temporary planned and unplanned outages of production, including shutdowns for maintenance at more or less the same times, which were used in part to explain tightening supply and justify the frequent price increases. For example, both planned and unplanned outages purportedly occurred at Westlake’s plants in Louisiana and Formosa’s Point Comfort, Texas, plant, and Olin and OxyChem at times said that operating rates had been reduced for various reasons at their plants,

including their plants in Texas, and Olin's plants in Tennessee, Alabama, and Louisiana. For example, Olin informed investors in February 2018 via a presentation slide referring to the continuation of "Favorable Chlor-Alkali Industry Conditions" that—in addition to the capacity reductions in North America—there were "no capacity additions expected within the next two to three years." Notably, though, this presentation was made approximately three months *after* defendant Shintech had filed a permit to say that it was considering expanding its capacity to make various products, including Caustic Soda, at its Plaquemine, Louisiana, complex. And although Shintech did formally announce the development of a new chloralkali and vinyl chloride monomer production facility and expansion of its PVC manufacturing capability in July 2018, any new Caustic Soda production capacity would not be operational for years, and it is unclear to what extent the new Shintech Caustic Soda production will be used captively by Shintech or sold to U.S. customers.

50. In 2016, domestic supply was artificially limited (and used to justify price increases) because several Defendants shut down capacity while exporting and selling supply abroad rather than using it to compete with each other domestically (and thereby lower prices). Olin entered the export Caustic Soda market for the first time in late 2015 after acquiring Dow's chloralkali assets. And despite capacity shutdowns, domestic supply was largely flat between 2016 and 2017, and significant industry excess capacity persists. For example, although Defendants' operating rates are proprietary, they appear to have averaged only 80-85% in the 2015-2018 time period. Also, after Hurricane Harvey hit Houston in August 2017, disrupting over one-third of domestic capacity for a brief time, customers were still able to buy Caustic Soda easily, though at higher prices.

51. Defendants' collective, coordinated capacity rationalization efforts have helped them to justify price increase after price increase since Olin's acquisition of Dow's Caustic Soda business in 2015 and to dramatically improve industry profits. For example, after years of annual decline from 2012-2015, Olin's income before taxes from operations of its Chlor Alkali Products and Vinyl's division skyrocketed after its purchase of Dow's chloralkali business in 2015, increasing 250% from 2015 to \$405.8 million in 2017. Defendants' profits have also benefited from their coordinated limitation of domestic supply in favor of export sales of Caustic Soda, as export prices soared in 2016 and 2017 in particular. In fact, since 2015 (after Olin first entered the export market after its purchase of Dow's chloralkali business), U.S. exports of Caustic Soda even disrupted at least one international market, in that India's Directorate General of Anti-dumping and Allied Duties has investigated the dumping of U.S.-manufactured and exported Caustic Soda in India.

52. Defendants routinely justified price increases based on "strong" GDP growth, yet real annual U.S. GDP growth between 2011 and 2015 averaged 2.2% annually, when Caustic Soda prices were flat or even declining, whereas from 2016-2017 it averaged only 1.9% annually, when prices skyrocketed.

53. Defendants' customers have been led by the supply-restricting Defendants to believe that Caustic Soda supply was "tight" and product "scarce" or otherwise limited. Indeed, many customers are still on "allocation" and are not permitted to purchase any more volume from their defendant-supplier than they have annually in the past. This conduct helps the Defendants not only to effectuate their relentless price increases but also to increase their profits while policing their agreements on supply and pricing, despite excess capacity and relatively stable demand and costs.

II. HISTORY OF PRICE INCREASES

54. From at least 2011 through 2014, Defendants' price increase announcements were largely unsuccessful, and average Caustic Soda prices over this time period tended to be flat or declining in the United States. This trend changed dramatically beginning in the fourth quarter of 2015. This is not a coincidence, and is not explained by supply and demand, but is explained by Defendants having formed a cartel.

F. 2015 Pricing

55. Given the self-concealing nature of price-fixing conspiracies, particularly those involving different forms of anti-competitive conduct engaged in by co-conspirators at different times, a precise start date of Defendants' secret conspiracy is unknown. But the price impact of Defendants' conspiracy began at least by the fourth quarter of 2015. It was in this quarter that customers were compelled by the Defendants to accept price increases, despite significant excess supply in the industry. Also, Olin completed its acquisition of Dow's chloralkali product assets (including Dow's Caustic Soda business) in October 2015, and began selling Caustic Soda for export for the first time. After four years of largely flat or declining prices, the fourth quarter 2015 price increase initiative had an immediate impact: it slowed the decline of prices, and ultimately helped increase prices to the Defendants' customers.

56. Caustic Soda prices had been stable to declining for years prior to October 2015 across the country, largely due to substantial excess capacity. Those prices generally continued to decline on average throughout 2015, even though at least defendants Olin and OxyChem had tried to stabilize or increase them in conversations with customers, futilely, during times (prior to the fourth quarter of 2015) when major end-user markets, such as alumina and pulp and paper, had cut

production and closed plants, and defendants Westlake and OxyChem had added new chloralkali production capacity.

57. Although there do not appear to have been any public, industry-wide announcements of price increases in 2015 prior to November 2015, an industry article indicated that several defendants in August 2015 were trying privately to increase contract customers' prices by \$40 per dry standard ton, around the same time that Axiall's President at an investors' conference invited Olin to shut down capacity upon finalizing its acquisition of Dow's chloralkali assets. ICIS, a chemical industry news service and consultant, reported on November 19, 2015, that there was a "new" industry price increase initiative by defendant Olin, and that "U.S. producers" had managed to increase prices \$40 per dst "across October and November" according to "market sources." In other words, the industry pushed-through a \$40/ton increase in the fourth quarter of 2015, shortly after Olin's completion of its acquisition of Dow's chloralkali business, even though there continued to be "ample supply" (according to an ICIS article) in 2015.

58. Defendant Olin's November 2015 price increase was for \$40 per dst, effective immediately for spot purchases or as contracts allowed, which in effect meant January 1, 2016, for at least some if not all contract customers. Almost immediately (within days) defendants OxyChem, Westlake, Formosa, and Shintech (as well as Axiall, which was not acquired by defendant Westlake until 2016) announced increased prices in the same amount to all customers nationwide. This appears to have been the first time in at least four years that a Caustic Soda price increase was supported publicly by every producer within only a few days. The increase also managed at least to stabilize the average price level—which had been declining for years—in spite of substantial excess capacity and flat demand, and all or nearly all of the Defendants' U.S.

customers ultimately paid a higher price for Caustic Soda in 2016, as the Defendants announced further price increases, described below.

G. 2016 Pricing

59. Caustic Soda prices continued to increase throughout 2016, even though U.S. industry effective capacity utilization averaged only 80-84% during the year, and defendant Olin and other defendant-producers idled or shut down hundreds of thousands of tons of capacity in 2016. Defendants Olin, OxyChem, Westlake (and predecessor Axiall), Shintech, and Formosa each announced \$30-\$40 per dst price increases in April 2016 and additional increases during the quarter, totaling approximately \$85 per dst. This was “the most significant increase of the past three years” by the producers, according to a May 20, 2016, ICIS article. The Defendants also announced increases of \$40-50 per dst in July and August 2016; \$60-80 per dst in September 2016; and \$40-65 per dst in the fourth quarter of 2016. In short, the Defendants worked together as an industry to increase Caustic Soda prices throughout 2016, and their customers ultimately paid those increases, despite relatively flat demand, stable costs, and significant excess industry capacity. For example, the Caustic Soda liquid index FOB Gulf Coast price reported by IHS Markit increased from \$430 per dst in April 2016 to \$625 per dst in January 2017, a 45% increase. Also, the average North American undiscounted quarterly contract price per short ton as reported by industry analyst IHS Markit increased 22% from \$595.80 in the fourth quarter of 2015 to \$725 in the fourth quarter of 2016.

60. As defendant Olin stated in a fourth quarter 2016 conference call with investors and analysts: “We enter 2017 with favorable caustic soda pricing trends. . . .We are optimistic that some portion of the \$40 per ton increase announced for January 1 will be realized during the first quarter. . . . [T]he average domestic contract price index . . . has increased \$85 per ton. . . . Within

the Olin system, the average domestic caustic soda price increased 5% from the third quarter of 2016 to the fourth quarter of 2016 . . . As a result of these trends, Olin continues to believe chlor-alkali industry pricing is entering a favorable multi-year caustic soda pricing environment and we are well positioned to benefit from these favorable dynamics.”

61. Defendant Oxy proudly noted in a February 2017 investor presentation that “Caustic [S]oda prices [had] reversed their multi-year trend of steady decline in mid-2016[.]” and that “[p]rotracted poor financial performance in the industry [was] improving market discipline.”

62. There are discrepancies between what customers were told to justify the Defendants’ 2015-2016 price increases and what defendant Olin told investors. Price increases were primarily and routinely justified to customers by a purported “tightness” in supply due to increased export demand for Caustic Soda produced in the United States. But this was misleading, because the Defendants controlled domestic production and had been managing it since 2015. For example, for many years, Olin had suggested to investors that Caustic Soda prices were under pressure due to industry excess capacity, telling them in every Form 10-K report it filed from 2009 through 2016: “The increased caustic soda supply can put downward pressure on our caustic soda prices, negatively impacting our profitability.” Olin also told investors in its 2016 Form 10-K that supply had “increased,” even though customers had been told throughout 2016 that supply was tight, and many were even put on allocation, in order to justify price increases in 2016, and industry effective capacity utilization in 2016 was only 80-84% at best (even after factoring-in the conspiratorial capacity shutdowns). A brochure announcing the “10th International Chlor-Alkali & Vinyls Conference” to take place in Bangkok, Thailand, on March 2-3, 2016, remarked on “the world overcapacity of caustic soda and downturn of demand[.]” A bulletin published by Industrial Minerals in March 2016 similarly stated that “[c]urtailments in alumina refinery capacity

worldwide, particularly in North America and China, have weakened demand for caustic soda, which has put further pressure on prices already under strain as a result of the collapse in energy prices, which account for approximately three quarters of caustic production costs.” Yet, despite “ample supply” of product and overcapacity and collapsing energy prices, the average quarterly North American undiscounted contract price per short ton of Caustic Soda increased 6% from the third quarter of 2015 (\$563) to the fourth quarter of 2015 (\$596), and then 22% to \$725 by the fourth quarter of 2016.

H. 2017 Pricing

63. Claiming “tightness” and “strong demand,” in February 2017, defendants Olin, OxyChem, Westlake, Formosa, and Shintech announced Caustic Soda price increases of \$60-\$85 per dst depending on grade—diaphragm (\$60) or membrane (\$85)—effective immediately or as contract terms allowed. This was apparently the first time that defendants Olin, OxyChem, and Westlake had announced an increase in different amounts for membrane and diaphragm grades (Formosa and Shintech only make membrane grade domestically). This differential was justified to some customers as due to “restrained” membrane-grade production, but this confused customers because tightness in supply was routinely used by Defendants to justify their increases of all grades, whether membrane or diaphragm. Then, in May 2017, defendants Olin, OxyChem, Westlake, Formosa, and Shintech announced increases of up to \$75/dst. These announcements resulted in increased prices paid by customers.

64. A few months later, in August and September 2017, at least defendants Olin, OxyChem, Westlake, and Shintech announced a \$75-\$100 increase (depending on grade). The impact of this increase effort is unclear, yet Olin’s third quarter 2017 Chlor-Alkali Products and

Vinyls segment earnings of \$129.7 million improved 142% from the third quarter 2016 (\$53.7 million).

65. In November 2017, the Defendants again announced Caustic Soda price increases, ranging from \$70 (diaphragm grade) to \$115 (membrane grade) per dst over the course of approximately four business days. Calls to customers and others had prepared the market for yet another price increase, and defendants OxyChem (\$80-\$100) and Westlake (\$85-\$115) mailed letters to customers announcing an increase a few business days before defendants Olin (\$70-\$100), Formosa (\$100), and Shintech (\$100) sent similar price increase letters.

66. Customers saw the steepest increases in Caustic Soda prices in a decade over the course of 2017, and the Defendants' 2017 price increases were successful. For example, defendant Olin informed investors that its "caustic soda pricing benefited from improved market dynamics and increased approximately 32%" from 2016 to 2017. The caustic soda liquid index FOB Gulf Coast price reported by IHS Markit increased from \$625 per dst in January 2017 to \$735 per dst by January 2018, a 14% increase. (This is a 70% increase since April 2016, when it was \$430 per dst.) And the average North American undiscounted quarterly contract price per short ton (reported by IHS Markit) increased from \$725 in the fourth quarter of 2016 to \$868.30 in the fourth quarter of 2017, a 20% increase.

67. In addition, an ICIS article dated Wednesday, January 3, 2018, based on information learned from market participants, indicated that the increases due to the Defendants' November 2017 announcements were still in the process of being implemented to contract customers in January 2018: "US producers have separately proposed price increases of \$70-115/dry short ton (dst) *for January and the first quarter* on the basis of tight supply. . . ." (Emphasis added.) And the November 2017 industrywide increase announcements appear to have

successfully increased customers' contract prices an average of \$30 per dst by January 2018, at least according to an IHS Markit report dated January 30, 2018.

I. 2018 Pricing

68. A price increase across the industry was announced in the first quarter of 2018 and implemented in an unprecedented way. On or about February 7, 2018, defendant Olin's CEO John Fischer informed investors that Olin expected higher export and Caustic Soda pricing in 2018, noting as well that Olin had exported up to 25% of its U.S. production in 2017. "We continue to believe that favorable industry supply and demand dynamics we began discussing two years ago for caustic soda remain in place and that Olin is well-positioned to benefit," Fischer added.

69. Just under a week later, on February 13, 2018, defendant Westlake announced a \$40 per ton price increase for all grades of liquid Caustic Soda (effective immediately or as contracts permitted), and defendant Olin immediately announced an \$85 per ton increase, sending letters to customers about it dated February 14, 2018. By February 26, 2018, defendants OxyChem, Shintech, and Formosa also had announced increases of \$85 per ton. By March 16, 2018, Westlake announced an *additional* \$50 per ton increase, in effect matching the other Defendants' increases, which had yet to take effect at most customers' accounts. Thus, the February price increase initiative appears to have been the first time that a producer (Westlake) announced an increase that was immediately doubled in size by another producer (Olin), with all domestic producers eventually announcing similar-in-size increases within the ensuing weeks. In addition, defendants Olin, OxyChem, and Westlake also apparently decided—at the same time—to stop announcing different price increase amounts for diaphragm and membrane grades, as they had done consistently throughout 2017.

70. On May 1, 2018, defendant Olin issued a press release trumpeting its first quarter 2018 results: “Our first quarter 2018 caustic soda pricing improved approximately 40% from first quarter 2017 and approximately 10% sequentially. We expect additional improvements in caustic soda pricing in the second quarter.” Shortly thereafter, defendant Westlake’s CEO Albert Chao told an investor conference that Westlake did not see any cap on Caustic Soda prices, because demand was growing while U.S. capacity was not. As if on cue, on May 21, 2018, both defendants Olin and OxyChem sent letters to customers announcing a \$40 per ton Caustic Soda price increase. Within days, defendants Formosa and Shintech announced \$40 per ton price increases, and defendant Westlake announced a slightly higher \$45 per ton increase.

71. On August 28, 2018, despite considerable industry excess capacity, defendant Olin announced another price increase, this time for \$50 per dry standard ton of all of its grades sold in the United States. Then, the other Defendants non-publicly (through direct, private contacts with customers) implemented the same price increase.

72. On November 27, 2018, defendant Olin announced a \$40 per dry standard ton increase of all of its grades of Caustic Soda sold in the United States by letters to customers. Defendants OxyChem, Formosa, and Shintech announced and implemented an identical increase within days non-publicly (through direct, private contacts with customers). Defendant Westlake announced a \$45 per dst increase within the week after Olin’s announcement.

73. It is remarkable that Caustic Soda prices to customers increased in 2018, given that industry excess capacity continued, and demand and Defendants’ costs continued to be stable. Indeed, Caustic Soda prices in June 2018 were generally at least 20% higher on average than they were in June 2017, and more than 50% higher than they were in 2015. Also, in early 2018, both

defendant Westlake and defendant Olin told investors that their second quarter operating income was higher in 2018 as compared with 2017 because of higher Caustic Soda prices.

J. 2019 Pricing

74. On February 20, 2019, defendant Olin announced a \$50 per dry standard ton increase of all of its grades of Caustic Soda sold in the United States (effective immediately or as contract terms permit) by letter to customers. Defendant OxyChem announced an \$80 per dst increase, and Formosa announced a \$70 per dst increase, almost immediately thereafter, non-publicly through direct, private contacts with customers. Westlake announced a \$75 per dst increase, and Shintech announced an \$80 per dst increase, shortly thereafter. This appears to have been the first time in the history of the industry that defendants Olin, OxyChem, Formosa, and Westlake each announced a different per dst price increase for all grades shortly after the initial announcement by one of them.

75. In light of those facts, and because Defendants' costs are believed to still be stable, industry excess capacity still exists, and demand continues to be flat, the February 2019 increase announcements are remarkable. They are additional indicia of the operation of a cartel in light of the facts that (1) industry analyst IHS Markit, which is in routine contact with the Defendants and controls the industry's price index, forecasted (non-publicly to clients) in or about late January 2019 that Caustic Soda prices would increase by the second quarter; (2) defendant Olin, after claiming that prices had declined late in 2018 due to "softer consumer demand," informed investors on February 5, 2019—as well as at its investor conference on February 12, 2019, at which IHS Markit gave a presentation to Olin investors—that prices would increase in 2019 given strong demand as well as "industry maintenance turnarounds" by the Defendants in North America; and

(3) Westlake's CEO echoed the sentiment that prices would increase in 2019 to its investors on February 19, 2019, the day before Olin's \$50 per dst increase announcement was sent to customers.

1. Pricing and Margin Summary

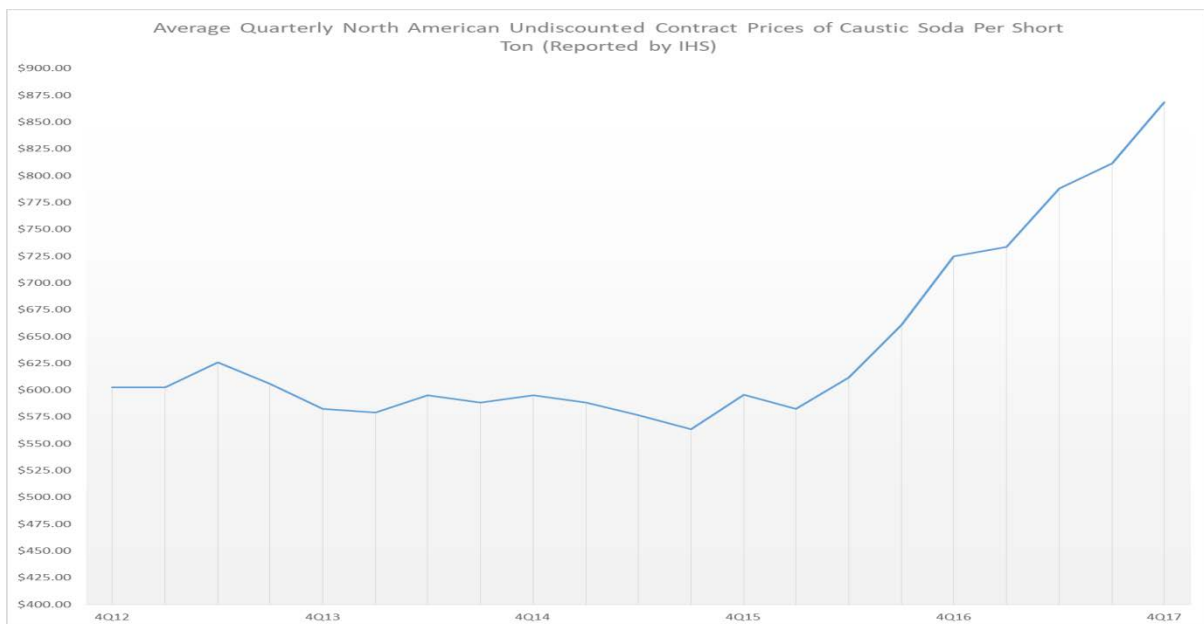
76. Beginning with the increases announced publicly by the Defendants in November 2015, prices to Defendants' Caustic Soda customers have materially increased. The following table summarizes Defendants' price increase announcements (discussed in detail above) in dollars per dry standard ton in recent years:

Publicly Known Caustic Soda Industry Price Increase
Announcements (Dollars Per Dry Standard Ton, Total Per Quarter)

	OLIN	OXYCHEM	WESTLAKE	FORMOSA	SHINTECH
Q4 2015	40	40	40	40	40
Q2 2016	85	75	75	75	70
Q3 2016	170	170	165	150	170
Q4 2016	40	40	45	65	40
*Q1 2017	60/85	60/85	60/85	85	60
Q2 2017	70/70	60/75	55/75	75	70
Q3 2017	80/100	80/100	75/95		100
Q4 2017	70/100	80/100	85/115	100	100
Q1 2018	85	85	40+50	85	85
Q2 2018	40	40	45	40	40
Q3 2018	50	50	50	50	50
Q4 2018	40	40	45	40	40
Q1 2019	50	80	75	70	80

*During 2017, Olin, OxyChem, and Westlake announced separate increase amounts for membrane and diaphragm grades.

77. The following graph shows the dramatic increase of the average quarterly North American undiscounted contract price of Caustic Soda from the fourth quarter of 2012 through the fourth quarter of 2017, according to the IHS Markit index (IHS Markit changed the index beginning in early 2018, as described further below, which is why this graph only goes through the fourth quarter of 2017):



78. Although the average Caustic Soda price increased in the first several quarters of 2018 and declined a bit in the fourth quarter as compared with the third quarter of 2018, Caustic Soda prices have still increased more than 50% from the fourth quarter of 2015, and prices in the fourth quarter of 2018 were generally higher than they were in the fourth quarter of 2017 as well. Presently, customers are still paying artificially high prices for Caustic Soda, because prices are still higher in the last three years than what supply, demand, and cost factors indicate they ought to be as compared with the four-year-period preceding the beginning of the Class Period.

79. With overall costs for manufacturing Caustic Soda stable, increased Caustic Soda prices have led to significantly increased industry margins since 2015. Although Defendants' precise Caustic Soda margins are unknown because they combine their margins with those of other chloralkali businesses for financial reporting purposes, Defendants' (the industry's) Caustic Soda margins are believed to have declined approximately 25-30% between 2012 and 2014, stabilized during 2015, and then increased substantially since then.

80. Since the beginning of the Class Period, Defendants have earned billions of dollars in net income from sales of Caustic Soda, and their profit margins have increased dramatically along with Caustic Soda prices. Although the specific amount of Olin's Caustic Soda margin improvement since 2015 is unclear, it is significant because prices of Olin's other products, including chlorine, have not increased anywhere near as much as its Caustic Soda prices have since 2015. For example, defendant Olin's Caustic Soda financials are part of its Chlor Alkali Products and Vinyls segment, which represents most of Olin's earnings and also includes chlorine and chlorine-derivative products. Olin's fourth quarter 2017 segment earnings increased 88% from fourth quarter 2016 (from \$72.4 million to \$135.8 million), "primarily due to higher pricing for caustic soda" and other products. In addition, defendant Olin's (and its chloralkali segment's) adjusted EBITDA has improved substantially since 2015. Olin's full year adjusted EBITDA *more than doubled* between 2015 (\$479 million) and 2018 (\$1.27 billion); by comparison, it had increased only 28% between 2012 and 2015. And Olin's chloralkali segment's adjusted EBITDA increased 35% from 2017 (\$838 million) to 2018 (\$1.13 billion). Also, Olin's second quarter 2018 adjusted EBITDA (for its Chlor Alkali Products and Vinyls segment) was its largest quarterly adjusted EBITDA since its acquisition of Dow's chlorine product assets in 2015. Olin also informed investors that its \$290.3 million second quarter 2018 adjusted EBITDA for its chloralkali business represented an 82% improvement since second quarter 2017, primarily due to higher prices for Caustic Soda and other products. Similarly, Olin informed investors that its \$333 million third quarter 2018 adjusted EBITDA (its highest EBITDA since acquiring Dow's chlorine product assets in 2015) was a 40% improvement over its third quarter 2017 EBITDA, primarily due to higher prices for Caustic Soda and other products.

81. Defendant Oxy's chemical segment earnings (which include defendant OxyChem's earnings) increased 44% from 2016 (\$571 million) to 2017 (\$822 million), a result in part due to "higher realized pricing for caustic soda," and its overall annual profit more than tripled from 2017 to 2018. Oxy's chemical segment earnings increased over 40% from 2017 (\$822 million) to 2018 (\$1.16 billion).

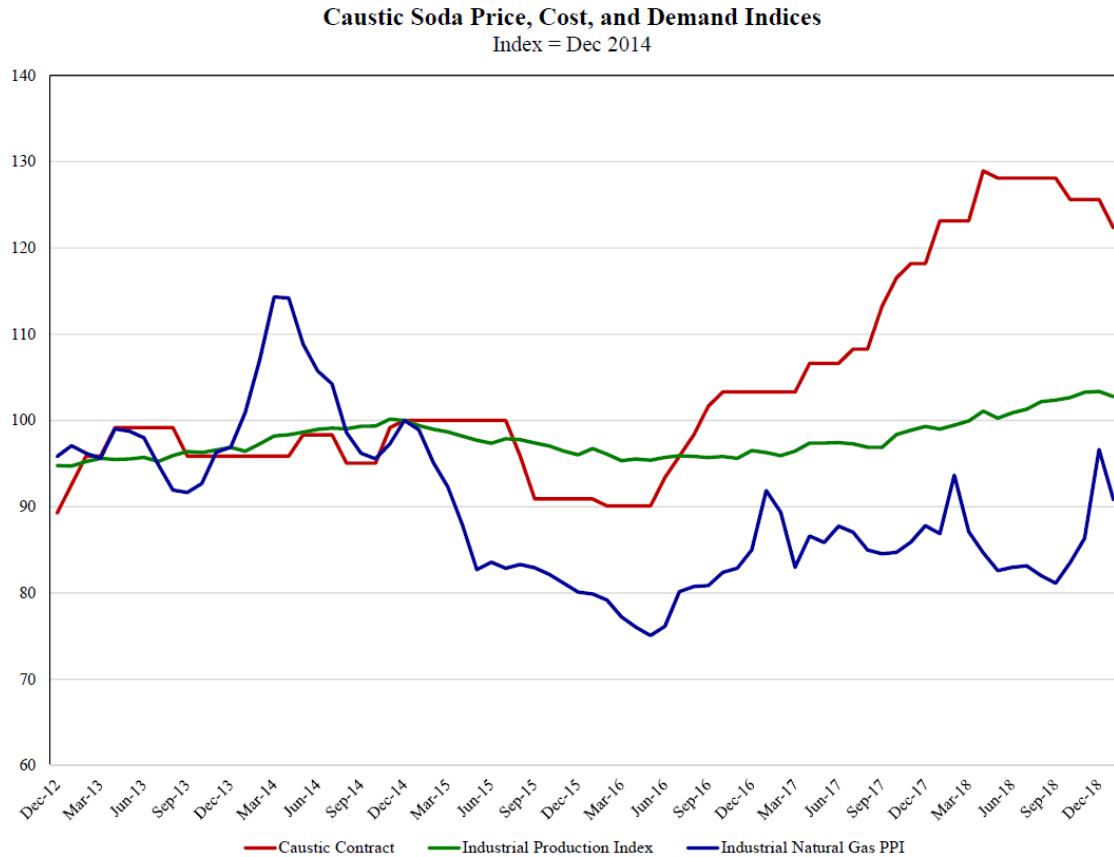
82. The income of defendant Westlake's Vinyls segment (which includes its Caustic Soda business) increased over 270% from 2016 (\$174 million) to 2017 (\$647 million). Also, Westlake achieved record EBITDA in 2018 of \$2.1 billion (it had achieved \$1.8 billion in 2017), and its Vinyls segment's sales and companywide net sales increased in 2018 from 2017 in part due to "higher sales prices and volumes for Caustic Soda."

83. Defendant FPC's and defendant Formosa's Caustic Soda sales and net income increased significantly from 2015 to 2017 as well, given Formosa's significant contributions to FPC's financials. Defendant FPC's 2018 shareholders' meeting handbook noted that its (global) Caustic Soda sales volume improved 4% from 2015 to 2016, and 9% from 2016 to 2017; that FPC's consolidated operating profit increased 68.5% from 2016 to 2017 ("a record high level for the Company in the past 6 years"); and that "equity investment income" from defendant Formosa in 2017 had helped defendant FPC reach the "highest level [of consolidated pretax profit] in the past 63 years since [FPC] was established."

84. Although global net sales of defendant Shin-Etsu's PVC/Chlor-Alkali business segment (including sales of defendant Shintech) declined from FY2016 to FY2017 (which ended March 31, 2017), that segment's global operating profit increased 19% in FY2017, and its profit from price improvement in FY2018 (which ended March 31, 2018) helped defendant Shin-Etsu achieve the highest profit in its history. It informed shareholders that a main factor in achieving its

highest profit ever in FY2018 was price improvement in its PVC/Chlor-Alkali business, including in every quarter of 2017.

85. Defendants' Caustic Soda price increases since the fourth quarter 2015, which have significantly increased Defendants' profits, cannot be explained by the normal competitive forces of supply and demand. While Caustic Soda prices have increased substantially since the fourth quarter of 2015, there continues to exist excess industry capacity (despite plant shutdowns), Defendants' energy and other costs have largely been flat or decreasing (or increased only nominally at times), and demand has been largely flat or sluggish (or only increased nominally at times). As the following graph shows, as indexed to December 2014, monthly contract Caustic Soda prices before the Class Period moved more or less in concert with industrial production (demand) and the cost of natural gas. But since the fourth quarter of 2015, Caustic Soda prices have significantly increased despite comparatively flat industrial production (demand) and natural gas costs. Absent illegal coordination, this is a very suspicious feat for a mature, oligopolistic industry selling a commodity product at a significant profit in the face of excess industry capacity, flat or decreasing costs, and only nominally increasing (or largely flat) domestic demand.



86. The alleged conspiracy was furthered and facilitated by a course of secret anticompetitive conduct, including agreements and understandings among Defendants to stabilize or increase prices (*e.g.*, as described below, by manipulating a price index managed by a third party, IHS Markit, and used to set contract prices for many customers); to idle or shut down domestic capacity and limit the supply of Caustic Soda sold in the U.S.; and to maintain and effectively allocate customers and domestic market shares (*e.g.*, by refusing to bid (or bidding high) for the business of customers being served by others, so as not to take business from a competitor).

87. The reasons given to customers by the Defendants for their price increase announcements tended to be largely the same during the Class Period: increasing demand for U.S. supply abroad; increasing demand from alumina producers; increasing domestic costs (which have actually been flat or decreasing); and plant closures for maintenance. These reasons were misleading, yet had the effect of stabilizing or increasing prices. Customers believed the prices they paid for Caustic Soda were competitive, but in fact they were influenced by Defendants' meetings and agreements with each other; supply assistance to each other (while limiting supply to customers by putting them on allocation); manipulation of a price index; and direct and indirect information exchanges of commercially sensitive, confidential business information with each other. For example, as recently as December 2018, customers were told that Caustic Soda prices needed to increase due to increasing demand (and Defendants announced a \$40-45 per dst price increase, explained above), yet defendant Olin told investors in early February 2019 that its Caustic Soda prices had declined in the fourth quarter from the third quarter 2018 due to softer demand. Olin further said that it anticipated Caustic Soda prices to increase, and that it expected that its first quarter 2019 EBITDA would be its lowest of 2019.

88. Defendants have been operating as a collegial, cooperative cartel to limit supply to domestic customers and have misleadingly justified price increases (*e.g.*, telling customers the market is "tight" and that they are on "allocation"), while selling domestically-produced volumes of Caustic Soda for export abroad. These and other facts described herein indicate active price and supply coordination, not competition, by the Defendants, and their formation of a secret cartel. Were the market competitive, given relatively stable costs and the existence of excess capacity, there would be stable to declining prices in this mature industry, as well as considerable customer turnover, as Defendants competed on price to win business, gain share, and increase profits. Since

the fourth quarter of 2015, however, instead of behaving like competitors, Defendants have conducted business in a “disciplined” manner, like cartelists, in that they have refrained from gaining market share at each other’s expense via price competition, and managed to substantially increase prices and profits, despite relatively stable demand, stable (or minimally increasing or declining) costs, and many years of excess capacity in the industry.

2. Defendants’ Anticompetitive Activities and Agreement

89. Price-fixing conspiracies necessarily must be conducted in secret in order to maintain their effectiveness. Defendants’ agreements or understandings in violation of the Sherman Act, as alleged herein, are inherently self-concealing, and precise details concerning them can only be obtained through discovery. The following alleged facts nevertheless indicate that the U.S. market for Caustic Soda is being unlawfully coordinated by Defendants and that they have formed a cartel.

90. **Price Increase Coordination:** The Defendants’ successful price increases during the Class Period have coincided with known industry meetings in the United States and abroad attended by Defendants’ representatives with Caustic Soda sales, pricing, marketing, production, distribution, or co-producer transaction responsibilities.

91. For example, defendants Olin, OxyChem, Westlake, and Formosa are members of American Fuel & Petrochemical Manufacturers (“AFPM”). AFPM’s Annual Meetings and International Petrochemical Conferences occur in March. In March 2016, 2017, 2018, and 2019 the Defendants were in the process of increasing prices to their U.S. customers, and Defendants sent one or more representatives to AFPM’s meetings and conferences. An ICIS article in March 2018 explicitly linked pricing and the AFPM meeting, stating, “US liquid caustic soda prices

appear to be firming as North American market participants head[ed]” to the International Petrochemical Conference of AFPM in San Antonio, Texas.

92. Representatives of most, if not all, of the Defendants also have attended meetings and conferences of The Chlorine Institute, domestically and abroad, whose members include defendants Olin, Oxy, Westlake, and Formosa. The Chlorine Institute’s major meetings take place annually in the spring and fall. Since the spring meeting of The Chlorine Institute in April 2016, the Defendants have been increasing U.S. prices during most of the months in which each of its meetings occurred.

93. Other industry meetings attended by representatives of all or most of the Defendants include: the annual ICIS and Tecnon OrbiChem World Chlor-alkali Conferences, which take place in June and at which at least several Defendants’ representatives have given presentations (*e.g.*, June 16-17, 2016, in Bangkok, Thailand, at which an Olin representative spoke; and June 21-22, 2018, in Kuala Lumpur, Malaysia, at which the Vice President of Chlor-Alkali and Derivatives of Westlake spoke); IHS Markit conferences (*e.g.*, the Global Chlor-Alkali Conference on September 13, 2017, in Antwerp, Belgium, at which defendant Olin’s Vice President, Global Caustic & Vinyls, spoke; and IHS Markit’s annual World Petrochemical Conferences, that have taken place in March in 2016, 2017, and 2018); meetings of the Vinyl Institute, whose only full members are defendants Formosa, Shintech, and Westlake, and defendant Oxy’s subsidiary OxyVinyls (the Vinyl Institute’s annual meetings took place in November 2015 and 2017, and in September 2016, when the Defendants were increasing U.S. prices); and meetings of the European Petrochemical Association, which occur in the fall (*e.g.*, Budapest, Oct. 1-4, 2016; Berlin, Sep. 30 – Oct. 3, 2017), and the Defendants were in the process of increasing U.S. prices in the fall of both 2016 and 2017. Additional contacts among Defendants’

representatives with Caustic Soda sales, pricing, marketing, production, distribution, and/or co-producer transaction responsibilities occurred while traveling together en route to industry meetings and in other private circumstances without counsel present domestically and abroad.

94. **Co-Producer Agreements:** During the Class Period, the Defendants entered into sales agreements as well as swap agreements of Caustic Soda and other products (including chloralkali derivatives) with each other in both North America and abroad. Details of such transactions are confidential and are believed to be known only to a limited number of employees at Defendants' companies, including high-level employees who manage co-producer transactions in addition to their Caustic Soda sales and marketing responsibilities. For example, when Hurricane Harvey temporarily idled some capacity at facilities owned by defendants OxyChem and Formosa creating logistical problems, those defendants were assisted with Caustic Soda supply by other (unknown) producers, believed to be other defendants (likely Westlake, which purportedly was able to produce at full rates after Harvey). The practice of selling Caustic Soda and other products (including chloralkali derivatives) to, or swapping products with, each other, is widespread among the Defendants and their affiliates both domestically and abroad. Defendant Olin, which makes and sells precursor chemicals used to manufacture PVC (but which does not make and sell PVC), supplies one or more of the other Defendants or their affiliates with such products, because defendants Formosa, Westlake, and Shintech, and defendant Oxy's subsidiary OxyVinyls, make and sell PVC. Defendants Olin and Oxy (and OxyChem) in particular have extensive (secret) co-producer supply agreements and contacts with each other. Swaps and sales of products inspire and reward exchanges of commercially sensitive information among the Defendants, and not only help to foster Caustic Soda industry cooperation rather than competition,

but also to keep Caustic Soda market shares stable and prices stable-to-increasing, as has occurred since 2015.

95. **Price Index Manipulation:** Many customers of the Defendants purchase under contracts, and the price of Caustic Soda agreed to in those contracts is at times determined based on a pricing index that is managed by industry analyst and consultant IHS Markit. (It is referred to in the industry often as simply “the index.”) It is believed that greater than 60% of the total annual volume of Caustic Soda sold in the United States by the Defendants has its price determined at least in part by the IHS Markit index. To determine the monthly and quarterly prices in the index, IHS Markit solicits and receives feedback from sales and marketing executives of at least the Defendants and other market participants, including purchasers of Caustic Soda from the Defendants. Prior to 2016, prices in the index tended to vary up and down, at times significantly, creating “valleys” in the price line. But after Olin’s purchase of Dow’s chloralkali business in 2015, Caustic Soda index prices have tended to increase, consistently and often dramatically, and at times even month-to-month and not simply quarter-by-quarter.

96. Defendants reached an understanding or agreement to manipulate the IHS Markit price index by selectively providing information to IHS Markit, or even false information, in order to ensure that the index reflected (and continues to reflect) the highest average contract price level practicable. The point of this conduct was to make customers whose contract prices were lower or similar (possibly all or nearly all customers, not just contract customers) believe that they were paying a “competitive” price that was below (or at worst comparable to) the purported market average according to IHS Markit. False or misleading information was, and still is, also provided to IHS Markit by the Defendants to try to maintain a trend of increasing market pricing, or at least to try to keep the index from declining significantly from month to month.

97. Defendants' influence on the index has made it appear artificially inflated to many market participants. One or more IHS Markit employees left IHS Markit in approximately 2016-2017 at least in part because of the index's lack of integrity; a former IHS Markit employee also helped to begin chlor-alkali market research and reporting services for Argus Media in 2017, which included reporting average monthly United States Gulf Coast domestic contract and export prices in dollars per dry metric ton. IHS Markit also changed its index in the first quarter of 2018, at least partly in light of doubts about its integrity, and the index's quarterly price level decreased significantly from the fourth quarter of 2017 as a result. Some were told that the index needed to be "corrected" and the change was a "non-market adjustment." It apparently changed from an index representing the average North American Caustic Soda undiscounted contract price (as commonly understood) to an index representing the average "North American *United States Gulf Coast* undiscounted contract price" of Caustic Soda. (Emphasis added.)

98. For purposes of calculating the indexed price, IHS Markit operates confidentially and non-publicly, but is heavily influenced and manipulated by the Defendants. For example, IHS Markit may contact only customers approved to be contacted by one or more of the Defendants for such contact (Defendants' customer lists are confidential). Or, when trying to verify price decrease information received from a Defendant's customer, IHS Markit may be misled by a Defendant to believe they were provided false information by that customer (when the information provided was true). It is believed that all of the Defendants are clients of IHS Markit and pay it for consulting services, and that IHS Markit's executives and analysts are friendly with and loyal to the Defendants. Along with other third-party analysts and consultants, like ECU North America and ICIS, IHS Markit is a source of market information, and also acts as a conduit of information among the Defendants. Simply stated, IHS Markit is used by the Defendants to affirm and police

their agreements and understandings with each other and to ensure that analysts and customers are routinely informed (or misled) about supposed “tightness” of supply due to anticipated (even if only temporary) capacity idling and shutdowns, which Defendants coordinate for maximum price stabilization and increases. It is no coincidence, for example, that temporary plant shutdowns by the Defendants in recent years often occurred around the same times. The overall purpose of this conduct by the Defendants is to exploit IHS Markit and customers’ reliance on the integrity of the price index to create conditions for customers’ and the market’s acceptance of increasing industry prices.

99. **Customer and Market Allocation:** Defendants have entered into an agreement or understanding not to genuinely compete on price for the business of each other’s customers. Customer turnover is believed to be lower now than it was in the years before Olin’s acquisition of Dow’s Caustic Soda business in October 2015, and also Westlake’s acquisition of Axiall’s business in August 2016. Defendants’ market shares have been relatively stable in recent years, despite the disruption one would have expected to see in a (competitive) mature, commodity industry with excess capacity, particularly after two large acquisitions resulted in only five major producers, down from seven, within only 10 months. Additionally, during the Class Period, customers have witnessed the Defendants refrain from bidding competitively for business—a change in prior conduct—such as by bidding high so as not to win business; ignoring a request for a bid (*e.g.*, not bidding at all or refusing to sell to the customer, even if the defendant had previously sold to that customer); or telling the customer they do not have any product to sell to them (*e.g.*, claiming product is “scarce” and supply “tight” or “snug”), or telling the customer it is on “allocation” or “order control” and that the defendant will only sell to the customer the same volume previously sold to it or a smaller volume (even a volume so small that it would not be

economically worthwhile for the customer to proceed with the purchase). Far from being an industry where producers routinely try to incentivize customers to buy their commodity product and switch suppliers (including distributors), the Caustic Soda industry’s producers—the Defendants—have been exercising “market discipline,” *i.e.*, refusing to agree to lower prices, raising prices in accord with each other’s price increases, and respecting each other’s customer positions and market shares by not taking business from each other at a lower price or “stealing” it. Such conduct also helps maintain the illusion that domestic supply is “snug” or “tight” (despite excess industry capacity), which in turn keeps prices and margins increasing. This is behavior consistent with, and indicative of, cartel formation and operation by the Defendants, not genuine competition.

100. **Information Exchanges:** Details of Defendants’ meetings and discussions with each other are confidential and cannot be learned absent discovery (assuming documentation of contacts was preserved and not destroyed). But both directly, and indirectly through trade association meetings and industry conferences, consultants, and analysts (*e.g.*, IHS Markit, ICIS, ECU North America, Technon Orbichem, Platts), and others, the Defendants have routinely exchanged confidential, commercially sensitive business information with each other, particularly concerning capacity and supply (*e.g.*, anticipated production outages), in facilitation of an agreement or understanding to keep Caustic Soda prices high and supply limited in an effort to maximize profits as an industry. For example, in both 2016 and 2017, Defendants conducted “plant maintenance” and (in effect) limited supply to customers more or less at the same times (which disconcerted those customers who knew about them), and these circumstances were used as a pretext to show market “tightness” to justify their price increases. In early 2018, at least defendants Olin and Westlake told investors and others that no industry capacity additions were planned and

that U.S. capacity was not growing, which is not something they could affirmatively state (at least truthfully) without having discussed industry capacity issues directly with (and received assurances from) their supposed competitors—the other defendants—particularly given defendant Shintech’s late-2017 filing of permits that included a potential increase of its Caustic Soda production capacity at Plaquemine. Defendants’ secret information exchanges fostered cooperation, not competition.

101. As alleged, the foregoing circumstances and practices indicate that Defendants have formed a cartel and reached an understanding or agreement to concertedly fix prices and limit the supply of Caustic Soda. This understanding or agreement was reached secretly through at least verbal, if not also written, communication among high-level employees of the Defendants, and is alleged to be ongoing, because Defendants continue to increase prices successfully in concert as an industry, despite sluggish demand, stable or declining costs, and excess capacity (even after accounting for Defendants’ limiting of domestic supply and capacity during the Class Period).

102. The specific date upon which Defendants’ understanding or agreement in violation of the Sherman Act commenced is information known only to Defendants. Defendants are nevertheless believed to have formed a cartel in or about the fourth quarter of 2015. This is because price impact resulting from the conspiracy’s artificial inflation of Caustic Soda prices started within that quarter, around the same time that Olin was invited by Axiall (if not others) to shut down capacity, and Olin completed its acquisition of Dow’s chloralkali business and also began selling for export for the first time.

103. Defendants intended to restrain trade, and did restrain trade, in Caustic Soda by reaching an agreement or understanding to end genuine price competition among themselves by supporting industry price increases and customer allocations; by manipulating a price index; by

assisting each other with supply; by limiting domestic supply and exporting and selling Caustic Soda abroad (to keep it off the domestic market); and by concertedly fixing, raising, maintaining, or stabilizing the prices for Caustic Soda by other secret means and methods. Further, Defendants achieved their goal of increasing and maintaining Caustic Soda prices at an artificially high level, and shared with each other, directly and through intermediaries, confidential and competitively sensitive information pertaining to their supply, their capacity, their pricing, and their business strategies, intentions and plans.

3. Industry Characteristics Indicating and Facilitating Defendants' Conspiracy to Restrain Trade

104. Since at least the beginning of the Class Period, the Caustic Soda industry has exhibited characteristics that have served to facilitate Defendants' conspiracy. Among other such characteristics (discussed above), the industry has exhibited: (A) market concentration among a limited number of participants; (B) high barriers to entry for new market participants; (C) interchangeability of Defendants' Caustic Soda products; (D) inelastic demand; (E) flat or declining demand; (F) a large number of purchasers, most with limited purchasing power; and (G) ease of information sharing among Defendants. Given that the mature Caustic Soda industry bears all of these characteristics facilitating cartelization, and given the relatively stable individual domestic market shares of the Defendants, their many contacts with each other, and their pricing behavior during the Class Period, it is clear that Defendants and their co-conspirators have formed a cartel. While the precise date of this cartel's formation is unknown, Plaintiffs believe, consistent with their allegations of Defendants' alleged price-fixing conspiracy, that it began—or at least began to impact industry pricing—on or shortly before October 1, 2015.

a) Market Concentration

105. Defendants, who together are an oligopoly, are the major producers and suppliers of Caustic Soda in North America. They are also among the largest producers in the world. They are believed to have a combined share exceeding 90% of the U.S. Caustic Soda market.

106. When there is a high degree of market concentration among relatively few sellers of a product (an oligopoly), operation of a cartel is facilitated because, as there are fewer sellers, it is not only easier to coordinate and police behavior among co-conspirators, but also more difficult for customers to avoid the effects of collusive behavior. As market power in the Caustic Soda industry is highly concentrated, the market is conducive to cartelization, meaning that it is conducive to price fixing and the other forms of anti-competitive conduct alleged herein, conduct which artificially inflated the prices paid for Caustic Soda.

107. In addition, Defendants' concerted actions have impacted pricing and output during the Class Period because of the relatively small market shares and capacity constraints of the non-defendant companies that make and sell Caustic Soda. There was no reasonable threat that manufacturers who were not members of Defendants' alleged cartel could undercut the cartel's concerted supply constraints and price manipulation and meet all or a significant part of market demand at more competitive (lower) prices.

b) High Barriers to Entry

108. In a market free of price fixing, higher profits draw-in other market participants, such as new entrants, who wish to capture a share of profits in the market. In industries characterized by substantial barriers to entry, new entrants are kept out of the market by those barriers, and cartel members may be able to raise prices to supracompetitive levels and reap high

levels of profits (or at least greater profits than they would otherwise earn but for the entry barriers that keep new entrants out).

109. Companies seeking to manufacture and sell Caustic Soda without having any prior involvement in the Caustic Soda market face very significant barriers to their entry. The domestic Caustic Soda manufacturing industry is a mature one dominated by the Defendants, which are large, multi-national corporations with global market reach. These companies have significant experience in the global Caustic Soda industry and have well-established reputations with both sellers of raw materials (*e.g.*, salt, energy) and purchasers of Caustic Soda. They have access to significant financial resources that not only allow them to commit the capital necessary to profitably manufacture and sell Caustic Soda and meet demand, but also to secure necessary supply chain commitments for the raw materials they require. For example, defendant Olin is able to meet most of its salt requirements through internal supply, and defendant Westlake has long-term leases on salt domes, from which it supplies its brine, and also produces electricity and steam internally.

110. For a prospective Caustic Soda manufacturer, setting up competitive manufacturing and supply chain operations is an enormous financial and logistic hurdle to market entry. A new entrant seeking to build Caustic Soda production facilities faces not only the sizeable cost of building plants, but also the costs of acquiring the necessary production technology, obtaining regulatory permissions, hiring and retaining skilled and knowledgeable employees, and securing the raw materials and supply chain commitments necessary to manufacture competitive grades. These costs combined would total in the billions of dollars. Indeed, as Olin stated in its 2015 SEC Form 10-K, “while the technologies to manufacture and transport chlorine and caustic soda are widely available, the production facilities require large capital investments, and are subject to significant regulatory and permitting requirements.”

111. Ultimately, to be competitive, a new market entrant has to commit to significant financial and operational undertakings to establish itself in an industry where—in the absence of any price manipulation—profit margins are not large and economies of scale must be achieved in order to reach profitability. Also, given excess capacity and flat domestic demand, a new market entrant’s commitment of the necessary financing and resources to establish itself in the market would be fraught with risk.

112. That no new manufacturers have begun producing Caustic Soda in many years suggests that the market is foreclosed to new competition.

c) Interchangeability of Defendants’ Caustic Soda Grades

113. Caustic Soda is a commodity chemical—sodium hydroxide—sold in liquid and powder forms and in diaphragm and membrane grades in the United States. Similar grades sold by Defendants are mutually interchangeable, if not identical or nearly so. For example, every Defendant makes and sells 50% Caustic Soda Solution, or a liquid 50% grade. It consists of 49-51% sodium hydroxide (Caustic Soda), 49-51% water, and ~1% sodium chloride.

114. Because customers are aware of the mutual interchangeability of Defendants’ respective grades of Caustic Soda, price is extremely important. But for Defendants’ anti-competitive understandings or agreements, lowering prices would be the primary means for Defendants to compete in the market.

d) Inelastic Demand

115. Inelastic demand means that increases in price result in limited declines in the quantity sold in the market. For a cartel to profit from raising prices above competitive levels, demand must be inelastic at competitive prices such that cartel members are able to raise prices without triggering a decline in sales that would make the price increase unprofitable. In other

words, demand is inelastic when the loss in volume arising from a price increase is small relative to the magnitude of the increase in price, allowing higher prices to increase revenues and profits.

116. When there are few or no substitutes for a product, purchasers have little choice but to pay higher prices in order to produce their own products, indicating that demand is inelastic. Caustic Soda is consumed by a wide variety of customers in many different end-markets. Defendants' high prices during the Class Period reportedly have driven some customers in different end-markets to substitute Caustic Soda with soda ash. But soda ash is not believed to be a viable economic substitute for Caustic Soda for most purchasers and applications.

117. The demand for Caustic Soda is relatively inelastic. When Defendants increased prices during the Class Period, all or nearly all customers paid all or a portion of the increases.

e) Flat or Weak Demand

118. Static or declining demand is one factor that makes the formation of a collusive arrangement more likely. Under normal business conditions, when faced with weak demand conditions, firms will attempt to increase sales by decreasing prices to take market share from competitors. For this reason, firms faced with static or declining demand have a greater incentive to collude and avoid price competition with competitors in order to stabilize their declining business. Static demand also makes it easier to monitor compliance with an agreement or understanding to fix prices, since market share gains (or "stealing" of share) likely would come at the expense of a co-conspirator rather than increases in market size.

119. The industrial production index saw slow growth from mid-2009 until a peak in November 2014. It then declined through March 2016 and was flat through November 2016. The index gradually increased after November 2016, although it did not again reach its November 2014 level until April 2018. Most markets that use Caustic Soda have also seen flat demand. Despite

flat or declining domestic demand, domestic prices have substantially increased. To the extent that demand for domestically-manufactured Caustic Soda increased abroad at times in recent years, Defendants worked cooperatively with each other to meet that demand while still limiting domestic supply to keep prices high (*e.g.*, by keeping most customers on allocation). Also, as noted above, weak demand in 2015 led at least one producer's CEO to invite Olin to idle or shut down capacity after its acquisition of Dow's chloralkali product assets, which it (and other Defendants) did over the course of 2016.

f) Large Number of Purchasers With Limited Purchasing Power

120. In a market with many purchasers, each has a small share of the total marketplace. Cartel members therefore have less of an incentive to cheat on collusive pricing arrangements, because each potential new sale is small while the risk of disrupting the collusive and profitable pricing agreement (*e.g.*, by starting a "price war") is considerable. Pricing also tends to be very transparent in such markets, given the number of customers aggressively seeking the lowest price for a (commodity) product.

121. In the market for Caustic Soda, Defendants have historically sold and currently sell to hundreds of purchasers in the United States and elsewhere. Most of these purchasers during the Class Period are believed to make up only a small amount of each Defendant's respective annual net sales. There is thus little incentive for any Defendant to cheat on a collusive pricing agreement and potentially foster genuine price competition, lowering industry profits. Pricing is also very transparent, in that prices are discussed daily between and among market participants, including Defendants, their customers, industry analysts, and consultants.

g) Ease of Information Sharing Among Defendants

122. Because of their common membership in trade associations and the business relationships between employees of the Defendants, there were many opportunities both before and during the Class Period for Defendants to collude by discussing competitive information regarding Caustic Soda. While the scope of Defendants' (secret) communications with each other is known only to the Defendants, it is believed that many of Defendants' highest-ranking employees with Caustic Soda sales, marketing, or production responsibility communicated with each other on a regular basis (if not daily in some periods) in the ordinary course of their business without legal counsel present, and that these communications routinely involved (and continue to involve) an exchange of confidential and commercially sensitive information, including concerning supply or pricing. The ease of "co-producer" communication also was facilitated by the fact that all of the Defendants or their affiliates also produce vinyl chloride monomer (primarily used to make PVC), and not simply chlorine and Caustic Soda.

123. Industry trade associations make an oligopolized market particularly susceptible to collusive behavior and active price and supply coordination, because they provide a pretext under which conspirators can exchange nonpublic, commercially sensitive information with each other, including on prices, customers, and supply. The cases involving cartels in commodity industries, where unlawful agreements were reached at industry meetings, are considerable.

124. Defendants are members of various trade associations. At least several if not all Defendants (or their affiliates) are members of at least the following associations: AFPM (defendants Formosa, Olin, Oxy, and Westlake are members); The Chlorine Institute (defendants Formosa, Olin, Oxy, and Westlake are members); The Vinyl Institute (defendants Formosa, Oxy, Shintech, and Westlake are members); Association of Chemical Industry of Texas; Texas

Chemical Council; Louisiana Chemical Association; and the European Petrochemical Association. Without discovery, most details cannot be known of Defendants' memberships, including the dates and locations of meetings and whether or not employees with sales, marketing, or production responsibility attended and communicated with each other around the times meetings occurred, because such details are not public and are known only to the Defendants. Nonetheless, as alleged above, Defendants' employees have met and spoken with each other at and around the time of trade association meetings and industry conferences, and have exchanged nonpublic, confidential, and competitively or commercially sensitive information with each other both directly and through intermediaries, including consultants, analysts, and customers. For example, a report dated May 19, 2017, written by an employee of a distributor of Caustic Soda about the market, stated that at an AFPM conference that had occurred while the Defendants were increasing prices: "Chlor-Alkali producers seemed to all be on the same page and the general consensus was caustic was extremely tight and pricing was moving up across the board, without exception."

125. Aside from formal means of exchanging information between one another, Defendants have among them numerous informal links, *e.g.*, between their former and current colleagues, their customers, and industry consultants or analysts. These links provided them the means and opportunity to exchange competitively sensitive information with each other, as well as their views on the market. Defendants' high-level executives have had personal access to each other both directly and indirectly through customers, consultants, and others. They also often "signal" pricing and supply intentions to each other through investor conferences. (For example, Olin has routinely informed investors *for years* that it believes conditions continue to be favorable for Caustic Soda price increases, in part because they (and other defendants like Westlake) stated

at times during the Class Period that they saw no plans for expansion of chloralkali capacity in the near term.)

126. Further, Defendants can procure relatively detailed competitive information from industry analysts, as well as trade associations (including at least The Chlorine Institute). The Caustic Soda industry is analyzed by a limited number of market research firms that deal in detailed industry data (*e.g.*, the sponsors of industry conferences noted above, ICIS Tecnon OrbiChem and IHS Markit). Each of these firms offers market data on pricing, supply, and other key indicators of market activity as well as market projections. The capacity and pricing information (including future supply and pricing intentions) procured by these analysts is provided directly from industry participants, including the Defendants. Given the limited number of analysts who cover the Caustic Soda industry, those that do are routinely provided confidential company information and direct access to decision-makers for the Defendants.

4. Effects of Defendants' Conspiracy On the U.S. Market for Caustic Soda and Injury to Plaintiffs and the Class

127. Defendants' combination and conspiracy as set forth herein has had the following effects during the Class Period, among others:

- a. Price competition among Defendants in the United States in the sale of Caustic Soda has been restrained;
- b. Prices for Caustic Soda sold by Defendants in the United States have been raised, fixed, maintained, and stabilized at artificial and non-competitive levels;
- c. The supply of Defendants' Caustic Soda available for sale to purchasers in the United States has been artificially and unjustifiably restrained; and
- d. Purchasers of Caustic Soda from the Defendants have been deprived of the benefit of free and open competition on the basis of price in the market for Caustic Soda.

128. As a direct and proximate result of Defendants' anticompetitive and unlawful conduct, Plaintiffs and the Class have been injured in their business and property in that, during the Class Period, they paid more for the Caustic Soda that they purchased directly from Defendants than they would have paid in the absence of Defendants' conduct.

129. The extent of the impact of Defendants' cartel and conspiracy only will be revealed with the benefit of full discovery. Plaintiffs and the Class have been damaged in an amount subject to proof that will be determined at trial. But given Defendants' billions of dollars in sales during the Class Period, the economics of the industry, and the range of commodity price inflation by cartels over the course of history, it is reasonable to preliminarily estimate that Plaintiffs and members of the proposed class have been damaged at least in the hundreds of millions of dollars.

CLAIM FOR RELIEF

RESTRAINT OF TRADE IN VIOLATION OF
THE SHERMAN ACT § 1
15 U.S.C. § 1
(Alleged against all Defendants)

130. Plaintiffs hereby repeat and incorporate by reference each preceding and succeeding paragraph as though fully set forth herein.

131. Beginning at least as early as October 1, 2015, the exact date being unknown to Plaintiffs and the Class and exclusively within the knowledge of Defendants, Defendants entered into a continuing combination or conspiracy to unreasonably restrain trade and commerce in violation of Section 1 of the Sherman Act (15 U.S.C. § 1) by artificially reducing or eliminating competition for the pricing of Caustic Soda directly sold to purchasers in the United States and elsewhere.

132. In particular, Defendants have combined and conspired to raise, fix, maintain, or stabilize the prices of Caustic Soda sold to purchasers in the United States during the Class Period.

133. Additionally, Defendants have combined and conspired to limit available supply of Caustic Soda sold to purchasers in the United States during the Class Period.

134. Defendants have also allocated customers and refused to supply or bid on contracts for Caustic Soda.

135. As a result of Defendants' unlawful conduct and acts taken in furtherance of their conspiracy, prices for Caustic Soda during the Class Period were raised, fixed, maintained, or stabilized at various times, and the available supply of these products were at times artificially limited, thereby eliminating natural price competition among Defendants who, in a market unfettered by their manipulation, would have competed against each other on the basis of price for sales of Caustic Soda.

136. The combination or conspiracy among Defendants consisted of a continuing agreement, understanding, and concerted action among Defendants.

137. For purposes of formulating and effectuating their combination or conspiracy, Defendants did those things they combined or conspired to do, including:

- a. Participating in meetings and conversations to discuss their respective prices and supply of Caustic Soda and how they could effectively coordinate their actions to restrain trade for Caustic Soda;

- b. Communicating in writing and orally to raise, fix, maintain or stabilize prices for Caustic Soda;

- c. Agreeing to coordinate and manipulate the prices and available supply of Caustic Soda directly sold to purchasers in the United States in a manner that deprived the purchasers of free and open price competition;

- d. Issuing or signaling to each other price announcements or price quotations in accordance with the agreements or understandings Defendants reached among themselves;
- e. Selling Caustic Soda to purchasers in the United States at noncompetitive and artificial prices that were collusively determined by Defendants;
- f. Allocating customers and refusing to supply or bid on contracts for Caustic Soda; and
- g. Providing pretextual justifications to purchasers and the public to explain increases in the prices of (or otherwise characterize the prices of) Caustic Soda.

138. Defendants' anticompetitive and unlawful conduct constitutes a *per se* violation of Section 1 of the Sherman Act (15 U.S.C. § 1).

139. As a result of Defendants' anticompetitive and unlawful conduct, Plaintiffs and members the Class have been injured in their businesses and property in that they have paid more for the Caustic Soda they purchased during the Class Period than they otherwise would have paid in the absence of Defendants' conduct.

DEMAND FOR JUDGMENT

WHEREFORE, Plaintiffs request that the Court enter judgment on their behalf and on behalf of the Class defined herein, by adjudging and decreeing that:

A. This action may proceed as a class action, with Plaintiffs serving as the Class Representatives, and with Plaintiffs' counsel as Class Counsel and the firms Cera LLP and Kaplan Fox & Kilsheimer as Co-Lead Class Counsel;

B. Defendants have combined and conspired in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1, and that Plaintiffs and the Class have been injured in their business and property as a result of Defendants' violations;

C. Plaintiffs and the Class are entitled to recover damages sustained by them, as provided by the federal antitrust laws under which relief is sought herein, and that a joint and several judgment in favor of Plaintiffs and the Class be entered against Defendants in an amount subject to proof at trial, which is to be trebled in accordance with Section 4 of the Clayton Act, 15 U.S.C.S. § 15;

D. Plaintiffs and the Class are entitled to pre-judgment and post-judgment interest on the damages awarded them, and that such interest be awarded at the highest legal rate from and after the date this class action complaint is first served on Defendants;

E. Plaintiffs and the Class are entitled to equitable relief appropriate to remedy Defendants' past and ongoing restraint of trade, including:

a. A judicial determination declaring the rights of Plaintiffs and the Class, and the corresponding responsibilities of Defendants; and

b. Issuance of a permanent injunction against Defendants and their parents, subsidiaries, affiliates, successors, transferees, assignees and the respective officers, directors, partners, agents, and employees thereof and all other persons acting or claiming to act on their behalf from continuing and maintaining the conspiracy or agreements alleged herein;

F. Defendants are to be jointly and severally responsible financially for the costs and expenses of a Court-approved notice program designed to give immediate notification to the Class;

G. Plaintiffs and the Class recover their costs of this suit, including reasonable attorneys' fees, as provided by law; and

H. Plaintiffs and the Class receive such other or further relief as may be just and proper.

JURY TRIAL DEMANDED

Pursuant to Federal Rule of Civil Procedure 38(b), Plaintiffs demand a trial by jury of all the claims asserted in this complaint so triable.

Dated: May 22, 2019

RUPP BAASE PFALZGRAF CUNNINGHAM LLC

By: /s/ Marco Cercone

Marco Cercone, Esq.
R. Anthony Rupp III, Esq.
Arthur N. Bailey, Esq.
1600 Liberty Building
424 Main Street
Buffalo, NY 14202
Telephone: (716) 854-3400
Facsimile: (716) 332-0336
Email: cercone@ruppbaase.com
Email: rupp@ruppbaase.com
Email: bailey@ruppbaase.com

*Attorneys for Individual and Representative
Plaintiffs and Interim Liaison Class Counsel*

By: /s/ Solomon B. Cera

CERA LLP
Solomon B. Cera, Esq. (*admitted pro hac vice*)
Pamela A. Markert, Esq. (*pro hac vice pending*)
595 Market Street, Suite 1350
San Francisco, CA 94105
Telephone: (415) 777-2230
Email: scera@cerallp.com
Email: pmarkert@cerallp.com

C. Andrew Dirksen, Esq. (*admitted pro hac
vice*)
800 Boylston St., 16th Floor
Boston, MA 02199
Telephone: (857) 453-6555
Email: cdirksen@cerallp.com

*Attorneys for Individual and Representative
Plaintiff Miami Products & Chemical Company
and Interim Co-Lead
Class Counsel*

By: /s/ Robert N. Kaplan

KAPLAN FOX & KILSHEIMER LLP
Robert N. Kaplan, Esq.
Jeffrey P. Campisi, Esq.
Elana Katcher, Esq.
Matthew P. McCahill, Esq.
850 Third Ave., 14th Floor
New York, NY 10022
Telephone: (212) 687-1980
Email: rkaplan@kaplanfox.com
Email: jcampisi@kaplanfox.com
Email: ekatcher@kaplanfox.com
Email: mmccahill@kaplanfox.com

Gary L. Specks, Esq. (*admitted pro hac vice*)
681 Prestwick Lane
Wheeling, Illinois 60090
Telephone: (847) 831-1585
Email: gspecks@kaplanfox.com

*Attorneys for Individual and Representative Plaintiff
Amrex Chemical Co., Inc. and Interim Co-Lead
Class Counsel*

KOHN, SWIFT & GRAF, P.C.

Joseph C. Kohn, Esq. (*pro hac vice pending*)
Robert J. LaRocca, Esq.
William E. Hoese, Esq. (*pro hac vice pending*)
Douglas A. Abrahams, Esq. (*admitted pro hac vice*)
1600 Market Street, Suite 2500
Philadelphia, PA 19103
Telephone: (215) 238-1700
Email: jkohn@kohnsnswift.com
Email: rlarocca@kohnsnswift.com
Email: whoese@kohnsnswift.com
Email: dabrahams@kohnsnswift.com

GRABAR LAW OFFICE

Joshua H. Grabar, Esq. (*admitted pro hac vice*)
1735 Market Street
Suite 3750
Philadelphia, PA 19103
Telephone: 267-507-6085
Email: jgrabar@grabarlaw.com

*Attorneys for Individual and Representative Plaintiff
Midwest Renewable Energy, LLC*

EDELSON & ASSOCIATES, LLC

Marc H. Edelson, Esq.
3 Terry Drive
Suite 205
Newtown, PA 18940
Telephone: 215-867-2399
Facsimile: 267-685-0676
Email: medelson@edelson-law.com

BURNS CHAREST LLP

Warren T. Burns, Esq.
Mallory Biblo, Esq.
900 Jackson Street, Suite 500
Dallas, Texas 75202
Telephone: 469.904.4550
Facsimile: 469.444.5002
Email: wburns@burnscharest.com
Email: mbiblo@burnscharest.com

HEINS MILLS & OLSON, P.L.C.

Vincent J. Esades, Esq. (*admitted pro hac vice*)
Rena D. Steiner, Esq.
310 Clifton Avenue
Minneapolis, MN 55403
Telephone: (612) 338-4605
Email: vesades@heinsmills.com
Email: rsteiner@heinsmills.com

*Attorneys for Individual and Representative Plaintiff
Perry's Ice Cream Company, Inc.*

BERGER & MONTAGUE, P.C.

Eric L. Cramer, Esq.
Ruthanne Gordon, Esq.
Candice Enders, Esq.
1818 Market St #3600
Philadelphia, PA 19103-6365
Tel: 215-875-4604
Email: ecramer@bm.net
Email: rgordon@bm.net
Email: cenders@bm.net

*Attorneys for Individual and Representative Plaintiff
Finch Paper, LLC.*

JOSEPH SAVERI LAW FIRM

Joseph R. Saveri, Esq.
601 California Street, Suite 1000
San Francisco, CA 94108
Telephone: (415) 500-6800
Facsimile: (415) 395-9940
Email: jsaveri@saverilawfirm.com

*Attorneys for Individual and Representative Plaintiff
Miami Products & Chemical Company*

HARTLEY LLP

Jason S. Hartley, Esq.
101 W. Broadway, Suite 820
San Diego, CA 92101
Telephone: (619) 400-5822
Email: hartley@hartleyllp.com

*Attorneys for Individual and Representative Plaintiff
Miami Products & Chemical Company*

BURNS CHAREST LLP

Amanda Klevorn, Esq.
365 Canal Street, Suite 1170
New Orleans, LA 70130
Telephone: 504.799.2845
Facsimile: 504.881.1765
Email: aklevorn@burnscharest.com

CAPUTO & MARIOTTI, P.C.

Joseph E. Mariotti, Esq.
Shawn P. Quinnan, Esq.
730 Main Street
Moosic, PA 18507
Telephone: 570-342-9999
Facsimile: 570-457-1533
Email: jmariotti@caputomariotti.com
Email: squinnan@caputomariotti.com

*Attorneys for Individual and Representative
Plaintiff Main Pool & Chemical Co., Inc.*

COHEN MILSTEIN SELLERS & TOLL PLLC

Manuel J. Dominguez, Esq.
2925 PGA Boulevard, Suite 204 Palm Beach
Gardens, FL 33410
Telephone: (561) 515-1400
Email: jdominguez@cohenmilstein.com

*Attorneys for Individual and Representative
Plaintiff Miami Products & Chemical Company*

Linda P. Nussbaum, Esq. (LN-9336)

Bart D. Cohen, Esq.

NUSSBAUM LAW GROUP, P.C.

1211 Avenue of the Americas, 40th Fl.
New York, NY 10036
Telephone: (917) 438-9189
Email: lnussbaum@nussbaumpc.com
Email: bcohen@nussbaumpc.com

*Attorneys for Individual and Representative Plaintiff
VanDeMark Chemical, Inc.*